

# ENGINEERING HERITAGE RECOGNITION PROGRAM

Proposal to nominate  
**James Street Railway Bridge**  
 As an Item of Engineering Heritage Interest.

<b>Item Name:</b>	James Street Railway Bridge		
<b>Other/Formal Names:</b>	Pottery Creek Bridge		
<b>Locality:</b>	Lithgow		
<b>Address:</b>	James Street. Lithgow		
<b>Co-ordinates</b>	-33.48192; 150.15196;		
<b>Current Owner:</b>	Transport Assets Holding Entity		
<b>Original Owner:</b>	New South Wales Government Railways		
<b>Current use:</b>	Railway underbridge (rail over road)		
<b>Former use:</b>	Railway underbridge (rail over watercourse)		
<b>Proposed use:</b>	Railway underbridge (rail over road)		
<b>Item Condition:</b>	Excellent		
<b>Designer:</b>	John Whitton		
<b>Builder:</b>	Patrick Higgins		
<b>Started:</b>	1866	<b>Completed:</b>	1869
<b>History:</b>	<p>This bridge within the township of Lithgow has been carrying the heaviest of trains on the Great Western Railway for over 150 years.</p> <p>It was opened on 18 October 1869 when the railway was extended west from Mount Victoria to Bowenfels, on the same day as the Great Zig Zag, as part of the contract let to Patrick Higgins in July 1866. As a stone arch it was one, probably the humblest one, of nine stone arches designed by John Whitton, Engineer-in-Chief of the New South Wales Railways since 1856. The masonry subcontractor for the bridge may have been George McGarvie Donald. He was certainly active in the area at the time and, according to his 1930 obituary worked on the nearby stone arch bridges at Zig Zag and Marrangaroo.</p> <p>All nine stone bridges still exist, though only two – James Street and the slightly older (1867) Stonequarry Viaduct at Picton still carry mainline railway traffic. Knapsack Bridge at Lapstone was bypassed by a deviation in 1913 and then used in a modified form from 1926 as the Great Western Highway until the modern freeway road alignment was opened in 1991. Three stone arch bridges carried trains along the Great Zig Zag, east of Lithgow, but bypassed in 1910, they remained unused until the Zig Zag Tourist Railway opened in 1975.</p> <p>West of Lithgow, Farmers Creek and Middle River were crossed by stone arch bridges in 1870 but when duplication of the track came in 1921 and 1923, improved grades left the bridges abandoned, as they remain. At Wallerawang the line had to cross the Coxs River, and this required a low but long bridge, again built in stone. When duplication came in 1923 its easy gradient was acceptable, but its single track meant that a replacement brick</p>		

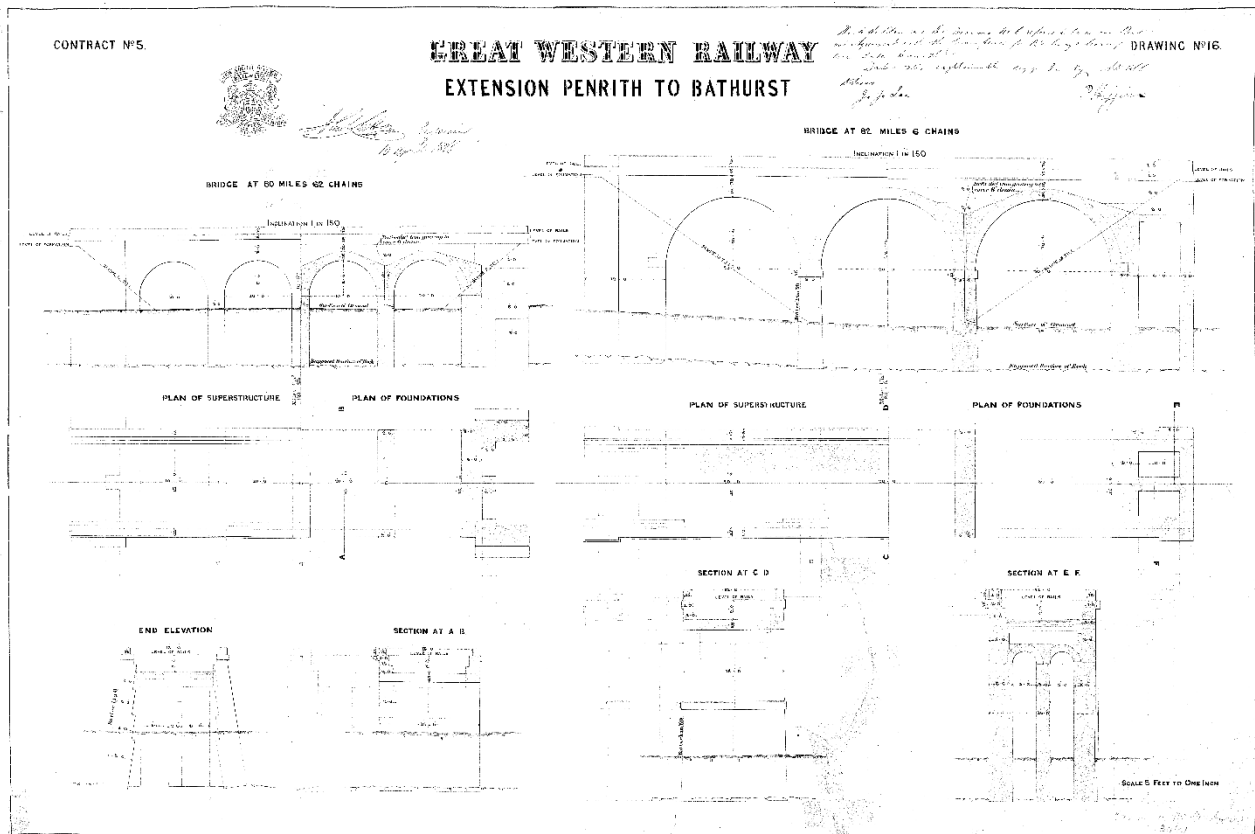
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	<p>arch and steel truss bridge was built beside it. Of the nine bridges eight were built for just a single track. Only Stonequarry Creek at Picton was built wide enough for two tracks. It is quite close to the station and perhaps the business of the station and the need to allow a train to wait until another oncoming one passed dictated a wider bridge. Although James Street bridge is now double track the original plans show it to have been built as single track.</p> <p>The section of the railway from Bottom Points on the Great Zig Zag to Bowenfels was duplicated quite quickly, by 1881, and it was at this time that the sandstone arches at James Street were widened, becoming double track on 21 October 1880. The quality of the masonry in the bridge makes the discernment of any joint between the old and new work quite difficult. One face of the arches, the spandrel walls and the parapets were dismantled and re-erected with the new and old arch rings toothed together as one, quite expertly.</p> <p>At some stage large iron bolts were placed between the opposite spandrel walls to stiffen them, but there is no documented record of when this was done.</p> <p>At first the bridge carried the railway over Pottery Creek, with a road, Albert Street, connecting across the railway alignment as a level crossing. In 1924 the level crossing was closed, and the route carried under the existing creek bridge as James Street. It is a simple underpass for a two-lane urban road with restricted height clearance (3.6m) for traffic. It comprises three 20ft (6.1m) circular arches, two used for the road and the third as a pedestrian path.</p>
<b>Description:</b>	<p>The bridge is a three-span stone arch. Each span is 20 feet (6.1m) span and carries two lines of railway. The carriageways of a local road traverse through two of the spans and the third is used for a pedestrian way. The stone spandrel walls are braced to each other by iron bolts.</p> <p>Original plans show that the bridge was built for single track only but was widened to two tracks in 1880 when the whole section from Zig Zag to Bowenfels was duplicated. This work was carried out by dismantling the spandrel walls, lengthening the arches, toothing the courses rather than using a straight joint, and then re-erecting the spandrel walls.</p>
<b>Engineering Significance:</b>	<p>The bridge displays the use of sandstone for bridges in the early construction of the NSW Railways by John Whitton. Although nine were built and all still exist, only two remain in active service on public railways.</p> <p>John Whitton was a very significant engineer in NSW in the second half of the nineteenth century.</p>
<b>Webpage Summary:</b>	<p>This relatively small and un-noticed bridge came into service on the same day as the famous Great Zig Zag a few miles closer to Sydney, opened in 1869. Although the Zig Zag has long since been superseded, the James Street bridge remains in service on what is now the East to West 'Indian Pacific' route, and seems likely to continue to do so indefinitely into the future.</p> <p>Although originally built to carry only single track it was, within a dozen years of its opening, skillfully widened to carry two tracks, such that only careful inspection reveals the modification.</p> <p>The bridge was designed by John Whitton, father of the NSW railways and built by Patrick Higgins – the same contractor for the Great Zig Zag.</p> <p>At first placed to carry the railway over a watercourse, it was later adapted to carry a local road so as to remove an adjacent level-crossing from the main line.</p>
<b>Engineering Theme:</b>	Refer Transport – River, Rail and Road.

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<b>Heritage Listing:</b> (State and/or Local Authority)	NSW State Heritage Register #1831 30 August 2013		
<b>References:</b>	Don Fraser, <i>Bridges Down Under</i> . ARHS 1995 John Forsyth, <i>Historical Notes on the Main West Line</i> 2003		
<b>Nominated by:</b>	Bill Phippen		
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<b>EHA Branch:</b>	Sydney	<b>Nomination Date:</b>	December 2023

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1866 plans of bridge at 82 miles 6 chains. Museums of History NSW.



Locomotive 1915 shunting on James Street bridge about 1953. Photographer unknown.

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*James Stret Bridge restored and cleaned. 3 September 2020. Bill Phippen.*



*Iron bolts through the spandrel walls. 3 September 2020. Bill Phippen.*

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*The bridge has clearly been widened from one track to two, but the joint can only be discerned by reference to the bond of the stone courses. 3 September 2020. Bill Phippen.*